DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT Housing - Federal Housing Commissioner	Series and Series Number: MATERIALS RELEASE NO: 1088e (Supersedes issue dated June 6, 2001)
TO: DIRECTORS, SINGLE FAMILY HOCs DIRECTORS, MULTIFAMILY HUBs	ISSUE DATE February 27, 2007
	REVIEW DATE February 27, 2010

SUBJECT: 1. **Product** Siplast Roofing Systems

2. **Name and address of Manufacturer** Siplast, Inc.
1111 Highway 67 South
Arkadelphia, AR 71923

Data on the nonstandard product described herein have been reviewed by the Department of Housing and Urban Development (HUD) and determination has been made that it is considered suitable from a technical standpoint for the use indicated herein. This Release does not purport to establish a comparative quality or value rating for this product as compared to standard products normally used in the same manner.

This Materials Release cannot be used as an indication of endorsement or approval by HUD of the described product, and any statement or representation, however made, indicating such approval or endorsement by HUD is unauthorized. See Code 18, U.S.C. 709.

Any reproduction of this Release must be in its entirety.

USE: The Siplast roofing systems are intended to be used on nominally flat to vertical roof slopes.

DESCRIPTION:

These roofing systems consist of membranes that may be laid over any type deck, prepared substrates and/or insulations which are acceptable to Siplast, Inc. (Siplast), and are in compliance with the appropriate Model Building Code.

Paradiene 20/30 and Veral/Irex are two-ply roofing membranes consisting of composite modified bitumen sheets incorporating a fiberglass mat core laminated on each side with a material which is a blend of Styrene Butadiene Styrene (SBS) and asphalt. Paradiene 20/30 is used primarily for nominally flat roofs (2.5:12" maximum slope) and is attached by the use of cold adhesive, heat welding, or set in hot asphalt depending on the substrate as specified by Siplast. Paradiene 30 Top Ply, has a mineral surface. Veral/Irex is used where a metal finish is desired. A minimum slope of 0.5:12" shall be maintained; there is no maximum slope. Attachment to the substrate is accomplished by heat welding the rolled membrane to the substrate by using a propane gas torch.

Parafor 50 is a single ply polyester mat/glass scrim reinforced modified bitumen membrane with mineral surfacing. Attachment to the substrate is accomplished by heat welding, hot asphalt or cold adhesive. A minimum slope of 0.5:12" shall be maintained; there is no maximum slope.

Paradiene 40 FR is a single ply fiberglass scrim/fiberglass mat composite impregnated and coated with SBS modified bitumen surfaced with ceramic granules. The membrane is attached to the substrate by an approved Type IV mopping asphalt or by PA-311/PA-311C cold adhesive. A minimum slope of 0.5:12" and a maximum slope of 6" in 12".

Paralosa is a single ply polyester mat/glass scrim reinforced modified bitumen membrane with ceramic granule surfacing. Attachment to the substrate is accomplished by heat welding. A minimum slope of 0.5:12" shall be maintained; there no maximum slope.

MATERIALS:

All materials shall be supplied by Siplast or its licensed roofing contractor. Any materials supplied by a contractor (e.g., ballast) shall be approved in writing by Siplast. Data on physical properties of the membrane (tensile strength, elongation, creep, softening point, brittleness, etc.) are on file in HUD and Siplast Headquarters.

Paradiene 20/30 Membrane

	Minimum Weight	Roll Width	Roll Length	Selvage Width
Base Ply				
Paradiene 20	62 lbs/sq	3.28 ft	50 ft	N/A
Paradiene 20 TG	76 lbs/sq	3.28 ft	33.5 ft	N/A
Paradiene 20 HT	62 lbs/sq	3.28 ft	50 ft	N/A
Paradiene 20 HT TG	76 lbs/sq	3.28 ft	33.5 ft	N/A
Paradiene 20 EG	84 lbs/sq	3.28 ft	33.5 ft	N/A
Paradiene 20 EG TG	96 lbs/sq	3.28 ft	33.5 ft	N/A
Paradiene 20 HV	84 lbs/sq	3.28 ft	33.5 ft	N/A
Paradiene 20 HV TG	96 lbs/sq	3.28 ft	33.5 ft	N/A
Paradiene 20 PR	55 lbs/sq	3.28 ft	20 ft	N/A
Paradiene 20 TS	74 lbs/sq	3.28 ft	33.5 ft	N/A
Top Ply				
Paradiene 30	90 lbs/sq	3.28 ft	33.5 ft	2.75 in
Paradiene 30 TG	107 lbs/sq	3.28 ft	25.25 ft	2.75 in
Paradiene 30 FR	90 lbs/sq	3.28 ft	33.5 ft	2.75 in
Paradiene 30 FR TG	107 lbs/sq	3.28 ft	25.25 ft	2.75 in
Paradiene 30 HT	91 lbs/sq	3.28 ft	33.5 ft	2.75 in
Paradiene 30 HT TG	107 lbs/sq	3.28 ft	25.25 ft	2.75 in
Paradiene 30 HT FR	91 lbs/sq	3.28 ft	33.5 ft	2.75 in
Paradiene 30 HT FR TG	107 lbs/sq	3.28 ft	25.25 ft	2.75 in

Veral/Irex

	Minimum Weight	Roll Width	Roll Length	Selvage Width
Base Ply				
Irex 30	72 lbs/sq	3.28 ft	34 ft	N/A
Irex 40	85 lbs/sq	3.28 ft	34 ft	N/A
Irex HT	85 lbs/sq	3.28 ft	34 ft	N/A
Top Ply				
Veral Aluminum	92 lbs/sq	3.28 ft	33.5ft	2.75 ft
Veral Copper	109 lbs/sq	3.28 ft	33.5ft	2.75 ft
Veral Stainless Steel	105 lbs/sq	3.28 ft	33.5ft	2.75 ft
Veral Spectra	97 lbs/sq	3.28 ft	33.5ft	2.75 ft

Parafor 50

	Minimum Weight	Roll Width	Roll Length	Selvage Width
Parafor 50 LT	141 lbs/sq	3.28 ft	26 ft	3.75 ft

Paradiene 40

	Minimum Weight	Roll Width	Roll Length	Selvage Width
Paradiene 40 FR	115 lbs/sq	3.28 ft	26 ft	3.75 ft

Paralosa

	Minimum Weight	Roll Width	Roll Length	Selvage Width
Paralosa TS	124 lbs/sq	3.28 ft	26.25 ft	3.75 in

Paraglas

Paraglas ply sheet is an asphalt-coated fiberglass mat which meets the requirements of ASTM D-2178, Type IV. It is designed for use under most Siplast roof systems that require a nailable substrate.

Parabase

Parabase is an asphalt coated glass fiber base sheet which meets ASTM D-4601 Type II. Parabase is designed for use under Siplast roof systems in nailable applications.

Parabase Plus	On systems where the advantages of a highly flexible modified base sheet are required, Parabase Plus is the solution. Parabase Plus is a modified asphalt coated fiberglass base sheet designed for use under guaranteed Siplast roof systems in certain nailable applications. It consists of a lightweight random fibrous glass mat impregnated and coated with a specially formulated SBS polymer modified bitumen. Parabase Plus meets or exceeds ASTM D-4601, Type II requirements.
Trafbloc	Trafbloc is designed as a protective course to be used in roof areas where there is pedestrian traffic or mechanical maintenance. It is composed of chopped rubber particles and synthetic binders. Trafbloc is .31 inch thick, and is available in rolls, 30.5 inches x 32.5 ft. It can be applied with hot asphalt or adhesive.
Paratread	Paratread is a modified bitumen sheet material designed to be used as a protective course in roof areas with anticipated high pedestrian traffic or mechanical abuse potential. It is composed of asphalt impregnated, puncture resistant polyester fabric, coated with a polymer modified bitumen topped with a ceramic-coated granule wearing surface. Paratread is 0.22 inch thick and is supplied in rolls 2.5 ft. x 20 ft. Paratread is adhered to Siplast roofing membranes using PA-1021 Plastic Cement.
PA-311/PA-311C Adhesive	PA-311/PA-311C Adhesive is designed for use with cementitious or high porosity substrates; meets or exceeds ASTM D-4479, Type II requirement. It can be applied by brush, roller or spray at a rate of 65 square feet per gallon. The porosity of some substrates may require heavier applications of adhesive to ensure adhesion. Membranes should be rolled after application to ensure complete contact with the adhesive. To facilitate application at temperatures below 40°F, the adhesive shall be stored for 24 hours at a temperature between 60°F and 80°F prior to use. PA-311C is available to meet regional VOC regulations. PA-311C product approvals are interchangeable with PA-311. PA-311C meets or exceeds ASTM D-4479, Type I.
Primer PA- 1125	Primer, PA-1125, shall conform to ASTM D-41. All metal flanges, and concrete and masonry surfaces shall be primed and allowed to dry thoroughly prior to roofing and flashing application.

PA-1021 Plastic Cement

PA-1021 Plastic Cement is a general purpose cement produced from refined asphalt and petroleum solvents with non-asbestos fibers added for reinforcement. PA-1021 is an all weather grade plastic cement. PA-1021 Plastic Cement is specifically designed for use with SIPLAST guaranteed roofing systems as a mastic for setting all metal flanges and drain lead flashings. PA-1021 meets or exceeds the requirements for ASTM D-4586 Type II for asbestos free, asphalt based roof cement.

PA-828 Flashing Cement

PA-828 Flashing Cement is specially formulated for use as a roofing membrane base flashing cement. It is produced from refined asphalt and low aromatic petroleum solvent with non-asbestos fibers added for reinforcement and enhanced slump resistance compared with general purpose plastic cement. PA-828 Flashing Cement is designed for use with Siplast guaranteed roofing systems as a membrane flashing adhesive. PA-828 is slump resistant and highly flexible for high slope and vertical applications. For best results with flashing applications, PA-828 should be applied using a notched trowel. PA-828 may also be used alternatively to PA-1021 as a mastic for setting all metal flanges and drain lead flashings. PA-828 Flashing Cement meets or exceeds the requirements of ASTM D-4586 Type II for asbestos free, asphalt based roof cement.

Asphalt

Steep grade asphalts (ASTM D-312 Type IV) shall be used for all mopping. The Equiviscous temperature (EVT) method of asphalt temperature determination shall be used in adhering the Paradiene and Parafor roof systems. Asphalt containers or bulk shipping tickets shall indicate the EVT, the Finish Blowing Temperature (FBT), the Softening Point (SP) and the Flash Point (FP). Asphalt shall not be heated above the FP, and heating at FBT shall be avoided. Maximum heating temperature 525°F or flash point less 50°F, whichever is lower, asphalt must not be heated above the flash point. Minimum application temperature measured at the point of contact with roofing sheet should not be less than 400°F All asphalt layers must be total in coverage, without breaks or voids.

Under cold weather conditions (40°F and below including wind chill) precautions must be taken to ensure that the asphalt is within the proper temperature range at the point of application. For cold weather application recommendations refer to Siplast Technical Guide or call 1-800-922-8800.

Asphalt must not be overheated to compensate for cold conditions. Insulated handling equipment under these conditions shall be used. During application, asphalt shall never be applied more than five feet ahead of the roll, which shall be unrolled continuously at a steady pace. Pressure shall be kept on the roll at all times to ensure proper embedment. Air pockets beneath the system or between plies are unacceptable. Any such pockets should be "walked in" immediately while the asphalt is hot.

Insulation

Insulation shall be approved by Siplast Roofing System; and shall be compatible with the substrate and attached to the deck in accordance with the insulation manufacturer's instructions.

ROOF DECK AND SUBSTRATE PREPARATION REQUIREMENTS:

Siplast acceptance of a deck to receive roofing is based strictly on the satisfactory condition of the surface to be roofed. Preparation of the substrates of selected roof decks shall comply with the latest edition of the Siplast Roofing System Specifications. Design of the roof deck is the responsibility of the owner or his architect/engineer.

DESIGN:

SINGLE PLY ROOFING INSTITUTE WIND DESIGN GUIDE

WIND AND FIRE CLASSIFICATION:

Mechanically fastened roofing systems shall be designed to resist wind uplift forces as determined in the Wind Design Guide for Mechanically Fastened Single-Ply Roofing Systems published by the Single Ply Roofing Institute (SPRI).

Ballasted roofing systems shall be designed in accordance with the Wind Design Guide for Ballasted Single-Ply Roofing Systems published by SPRI.

Fire Classification shall be in accordance with Underwriters Laboratories, Inc. (UL), or Factory Mutual Engineering Corporation (FM) construction details. To qualify for fire rating and uplift resistance, the system shall be in the current UL or FM Listings.

INSTALLATION:

Compliance with this MR requires all SIPLAST pre/job procedures be followed. This is for a SIPLAST GUARANTEED ROOF MEMBRANE SYSTEM. For more detailed information and specifications, call 1-800-922-8800 or 1-800-643-1591.

All the Siplast Roofing Systems, including insulation, shall be installed by a Siplast approved roofing contractor.

Membrane installation shall be in accordance with the Siplast Specifications, for the placing, bonding, lap splicing, perimeter attachment, flashing, construction closure, walkways and any other work to provide a watertight roofing system.

CERTIFICATION AND INDENTIFICATION:

Siplast shall certify that each of the products listed in this report conforms to the requirements of this MR. Both Underwriters Laboratory and Factory Mutual shall validate the manufacturers certification that the products listed in this report meet the requirements for this MR. Each certified product in this report shall be marked with the following information:

Siplast
2. The Product Name (i.e. Paradiene 30 TG)
3. Both Underwriters Laboratory and Factory Mutual labels must appear on the label
4. Production code traceable to day and shift of manufacture.
5. MR 1088

MANUFACTURING LOCATION:

The product covered under this MR will be produced at the following plant:

Siplast/Icopal
1111 Hwy 67 South
Arkadelphia, AR 71923
Contact: Todd Corley
800.840.1592 ext. 1505

INSPECTION AND WARRANTY:

A designated representative of Siplast shall make inspection of the installation at the following intervals: (1) during the installation, to inspect and approve the installation techniques and methods and (2) upon completion, to give final approval to the installation.

A ten year warranty shall be given to the owner by Siplast, Inc. and shall read as follows:

Siplast, Inc. hereby warrants to the owner of its roofing system as described herein (system), which system has been installed by an applicator approved by Siplast, that the system will remain in a watertight condition for a period of ten years from the date of installation, and in the event of failure of the aforesaid system to function as warranted above, whether on account of defective materials, faulty installation, or on account of normal processes of wear and aging, Siplast will make or cause to be made such repairs and maintenance necessary to enable the system to perform as warranted above.

Conditions of the Warranty

Siplast's obligations to repair or maintain the system under this warranty shall not be in force or effect unless: (1) Siplast is promptly notified of any failure of the system covered by the Warranty within thirty (30) days following such failure; (2) the system is installed by an applicator approved by Siplast; and (3) no alterations or repairs to the system are made without the prior written approval of Siplast as to the extent, methods, and materials used.

Liabilities Excluded From Coverage of This Warranty

1. Siplast assumes no liability for damage to the building on which the system is situated, nor for damage to the contents thereof, nor to any other property or persons, nor for any incidental or consequential damages.

2. Siplast assumes no liability for any failure of the system resulting from Acts of God, including lightning, earthquake; nor for any failure of the system is situated; nor from deliberate misuse of the system, nor for any failure of the system caused by leakage or any other cause from an adjacent structure.

No Other Expressed Warranty

No other warranty, expressed or implied, is hereby given, and no affirmation by Siplast, Inc. by words or otherwise shall constitute any such warranty. The terms and conditions hereof contain the entire agreement between the parties hereto, and may not be altered in any manner whatever, unless by writing.

The manufacturer's warranty does not in any way, relieve the builder of responsibility under the terms of the Builder's Warranty required by the National Housing Act or under any provisions applicable to any other housing program. A copy of the manufacturer's warranty shall be furnished by the builder to the owner upon completion of the property.

MANUFACTURER'S RESPONSIBILITIES:

Issuance of this Materials Release (MR) commits the manufacturer to fulfill, as a minimum, the following:

1. Produce, label and certify the material, product or system in strict accordance with the terms of this MR.

2. Provide necessary corrective action in a timely manner for all cases of justified complaint, poor performance or failure reported by HUD.

3. When requested, provide the FHA Standards, Office of Manufactured Housing Programs, HUD Headquarters, with a representative list of properties, in which the material, product or system has been used, including complete addresses or descriptions of locations and dates of installation.

4. Inform HUD in advance of changes in production facilities, methods, design of the product, company name, ownership or mailing address.

MANUFACTURING PLANTS:

The products covered by this Materials Release will be produced in the following plant:

Siplast Inc.
1111 Highway 67 South
Arkadelphia, AR 71923

EVALUATION:

This MR shall be valid for a period of three years from the date of initial issuance or most recent renewal or revision, whichever is later. The holder of this MR shall apply for a renewal or revision 90 days prior to the Review Date printed on this MR. Submittals for renewal or revision shall be sent to:

U. S. Department of Housing and Urban Development
FHA Standards, Office of Manufactured Housing Programs
451 7th Street, SW, Room 9168
Washington, DC 20410-8000

Appropriate user fees shall be sent to:

U. S. Department of Housing and Urban Development
Miscellaneous Income - Technical Suitability of Products Fees
Bank of America
P. O. Box 198762
Atlanta, GA 30384-8762

The holder of this MR may apply for revision at any time prior to the Review Date. The revision may be in the form of a supplement to the MR.

If the Department determines that a proposed renewal or supplement constitutes a revision, the appropriate User Fee for a revision will need to be submitted in accordance with Code of Federal Regulations 24 CFR 200.934, "User Fee System for the Technical Suitability of Products Program," and current User Fee Schedule.

CANCELLATION:

Failure to apply for a renewal or revision shall constitute a basis for cancellation of the MR. HUD will notify the manufacturer that the MR may be canceled when:

1. conditions under which the document was issued have changed so as to affect production of, or to compromise the integrity of the accepted material, product, or system,

2. the manufacturer has changed its organizational form without notifying HUD, or

3. the manufacturer has not complied with responsibilities it assumed as a condition of HUD's acceptance.

However, before cancellation, HUD will give the manufacturer a written notice of the specific reasons for cancellation, and the opportunity to present views on why the MR should not be canceled. No refund of fees will be made on a canceled document.

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This Materials Release is issued solely for the captioned firm, and is not transferable to any person or successor entity.

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